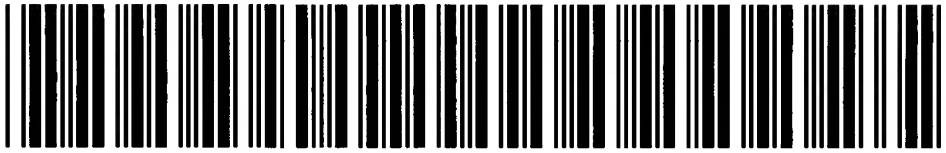
# IDS REFERENCES



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# The powder method
## *in x-ray crystallography*


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$SnI_4$, and rubidium aluminum alum, $RbAl(SO_4)_2 \cdot 12H_2O$. Both these compounds have primitive isometric unit cells of edge 12.2 Å.

On the other hand, the relative intensities of the various reflections *hkl* of a crystal depend upon the way the contributions from its several lattice arrays interfere with each other for the several reflections *hkl*. Therefore, the set of intensities of the reflections *hkl* depends entirely on the arrangement of atoms in the motif.

These conclusions can be brought together as follows: *The locations of the reflections of a crystal depend on the shape and type of its unit cell; the relative intensities of these reflections depend on the arrangement of the atoms within this cell.* The combination of the unit cell and the arrangement of atoms in it comprises the crystal structure itself. Therefore, the locations and relative intensities of the reflections of a crystal are characteristics of the crystal structure. Whether or not the powder diagram of an unknown crystal can be interpreted, at least this diagram is characteristic of the crystal and can be used like a fingerprint to distinguish it from other crystals, and hence to identify it. This is the philosophic basis for using the powder diagram of x-ray reflections in crystal identification.